CLAIMS

1. A method of providing extra traffic (ET) paths in a communication network including at least two protection channels (A, B) associated to respective transmission channels, each of said at least two protection channels (A, B) admitting an active state for carrying, in the presence of a failure in said associated transmission channel, traffic to be carried by the associated transmission channel and a stand-by state, wherein the protection channel is adapted to carry extra traffic (ET), characterized in that it includes a step of running said at least two protection channels (ET) in a sub-network connection protection scheme, whereby one of said at least two protection channels (A, B) in said stand-by state is adapted to ensure recovery of extra traffic carried by the other of said at least two protection channels (A, B) while one of the following conditions is met:

- said other of said at least two protection channels (A, B) is switched to said active state,
- said other of said at least two protection channels (A, B) is subject to failure.

2. The method of claim 1, characterized in that it includes the steps of:

- associating to each of said at least two protection channels (A, B) corresponding input and output digital cross connects (DXCs), and
- running said sub-network connection protection scheme at said input and output digital cross connects (DXC).

3. The method of claim 1, characterized in that it includes the steps of:

- associating to each of said at least two protection channels (A, B) corresponding input and output add-drop multiplexers (ADM), and

- running said sub-network connection protection scheme at said input and output add-drop multiplexers (ADM).

4. The method of claim 1, characterized in that it includes the steps of providing in said communication network at least one ring structure including non-coextensive paths and the step of associating said at least two protecting channels (A, B) to respective non-coextensive paths in said ring.

5. The method of claim 1, characterized in that it includes the steps of providing in said communication network a plurality of ring structures and the step of associating said at least two protection channels (A, B) to two respective different rings of said plurality of rings.

6. The method of claim 5, characterized in that in it includes the step of selecting said two different rings as rings belonging to the same class of rings.

7. The method of claim 5, characterized in that in it includes the step of selecting said two different rings as rings belonging to different classes of rings.

8. The method of claim 1, characterized in that it includes the step of providing a non-preemptible unprotected traffic (NUT) carried on non-preemptible channels in said network as well as non-preemptible channels protected by a sub-network connection protection (SNCP) scheme, wherein said extra traffic is ensured an intermediate level of availability between the levels of protection provided by said non-preemptible channels and by said non-preemptible channels protected by a sub-network connection protection (SNCP) scheme.

9. A communication network including at least two protection channels (A, B) associated to respective transmission channels, each of said at least two protection channels (A, B) admitting an active state

for carrying, in the presence of a failure in said associated transmission channel, traffic to be carried by the associated transmission channel and a stand-by state, wherein the protection channel is adapted to carry extra traffic (ET), characterized in that said at least two protection channels (ET) jointly define a sub-network connection protection scheme, whereby one of said at least two protection channels (A, B) in said stand-by state is adapted to ensure recovery of extra traffic carried by the other of said at least two protection channels (A, B) while one of the following conditions is met:

- said other of said at least two protection channels (A, B) is switched to said active state,
- said other of said at least two protection channels (A, B) is subject to failure.

10. The network of claim 9, characterized in that it includes corresponding input and output digital cross connects (DXCs) associated to each of said at least two protection channels (A, B) and wherein said input and output digital cross connects (DXC) jointly define said sub-network connection protection scheme.

11. The network of claim 9, characterized in that it includes corresponding input and output add-drop multiplexers (ADM) associated to each of said at least two protection channels (A, B) and wherein said input and output add-drop multiplexers (ADM) jointly define said sub-network connection protection scheme.

12. The network of claim 9, characterized in that it includes at least one ring structure including non-coextensive paths and wherein said at least two protecting channels (A, B) are associated to respective non-coextensive paths in said ring.

13. The network of claim 9, characterized in that it includes a plurality of ring structures and wherein said at least two protection channels (A, B) are

associated to two respective different rings of said plurality of rings.

14. The network of claim 13, characterized in that said two different rings belong to the same class.

15. The network of claim 13, characterized in that said two different rings belong to different ring classes.

16. A computer program product loadable in the memory of at least one computer and including software code portions for performing the steps of the method of any of claims 1 to 8.